

Spectra-Physics Nitrogen Lasers

VSL-337ND-S Nitrogen Laser



- No optics alignments or flowing gas required
- CE marked
- Customer replaceable plasma cartridge
- Optosync output for precise timing requirements

The VSL-337ND-S nitrogen laser emits 4 ns pulses in the UV at 337 nm. The pulse repetition rate may be varied from 1 to 60 Hz with a pulse energy of up to 300 μ J. The laser may be triggered internally or externally. A unique feature of the VSL-337ND-S is the Optosync port, which delivers a high-speed TTL signal derived from the laser itself that results in sub-nanosecond jitter. Constant pulse shape and good pulse-to-pulse stability were designed into the VSL-337ND-S with our fixed-electrode and discharge-stabilizing pre-ionizers. The VSL-337ND-S features our user-replaceable plasma cartridge, allowing the customer to regain the performance of a new laser at a fraction of the cost. Our patented design ensures minimal downtime because no adjustments are necessary for the resumption of full-spec performance. The plasma cartridge typically maintains at least 70% of its energy for 20 million pulses. The output of the VSL-337ND-S laser is near-diffraction limited and produces a collimated beam that can be focused to a $>3 \mu\text{m}$ spot of peak power with energy density of 4.5 kJ/cm². This versatile laser may also be equipped with one of its dye laser accessories, the DUO 220 or DUO 210, for obtaining tunable output from the IR to the UV.

Applications

- MALDI mass spectrometry
- Microdissection
- Fluorescence amino assay
- Micro-machining
- Trace element analysis

Specifications

Output Characteristics	VSL-337ND-S
Wavelength	337.1 nm
Spectral Bandwidth	0.1 nm
Repetition Rate	<1–30 Hz, up to 60 Hz burst mode
Pulse Width, FWHM	<4 ns
Pulse Energy	300 μ J at 10 Hz
Pulse-to-Pulse Energy Stability	<4% standard deviation
Peak Power	75 kW
Average Power	6 mW at 20 Hz
Beam Area	35 mm ²
Beam Divergence, Full Angle	0.5 mrad typical
Electrical Characteristics	
External Trigger	TTL
Trigger In to Optical Pulse Out	700 ns nom.; \leq 40 ns standard deviation jitter
Power Consumption	150 W at 10 Hz
Optosync Output	TTL 50 ohms
Optical Pulse to Optosync Delay	50 ns.; < 500 ps standard deviation jitter
Burst Input	TTL, High = disabled
Services and Equipment	
Air Flow Requirements	12 CFM
Electric Service Requirements	
Voltage	110 or 220 VAC
Current	1.5 @ 110 VAC; 1.0 @ 220 VAC
Frequency	50/60 Hz
Phase	Single
Environmental	
Temperature Range	4–40°C (40–105°F)
Humidity (non-condensing)	0–95%
Altitude	0–3000 m (0–9800 ft)

Ordering Information

VSL-337ND-S	Standard 110 V	P/N 337201-00
VSL-337ND-S	Standard 220 V	P/N 337201-01